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Additions to the Afrotropical Aulacidae (Hymenoptera, Evanioidea)

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A b s t r a c t : The distinctive *Pristaulacus smithi* TURRISI, 2006, previously known from Mozambique and Zimbabwe, is newly recorded from Namibia, Botswana and Republic of South Africa, based on recently collected material, thus, extending significantly its known distribution. A new specimen of *Pristaulacus africanus* (BRUES, 1924) is added to the few previously known, and its known range appears to be restricted to the Western Cape Province (Republic of South Africa). Additional illustrations of distinctive taxonomic features of both species are provided. A brief summary on the distributional records of the Afrotropical aulacids so far known is provided.

K e y w o r d s : Hymenoptera, Evanioidea, Aulacidae, Afrotropics, new records.

Introduction

The Evaniomorph family Aulacidae comprises 260 extant species belonging to two genera, *Aulacus* JURINE, 1807, with 83 species, and *Pristaulacus* KIEFFER, 1900 (including the former *Panaulix* BENOIT, 1984), with 177 species (SMITH 2001, TURRISI et al. 2009, TURRISI 2017). Both genera are represented in all zoogeographic regions, except Antarctica, and *Aulacus* not known from Afrotropics (KIEFFER 1912, HEDICKE 1939, SMITH 2001, TURRISI 2006, 2017, TURRISI et al. 2009). In the Afrotropical region, only six species are currently known (TURRISI 2006, 2017, VAN NOORT 2017), with scattered records for the following Countries: Democratic Republic of Congo, Kenya, Zimbabwe, Mozambique, and Republic of South Africa (TURRISI 2006, VAN NOORT 2017).

Aulacids are parasitoids of wood-boring Hymenoptera (Xiphydriidae) and especially Coleoptera (mostly Cerambycidae and Buprestidae) employing a koinobiont endophagous strategy (SKINNER & THOMPSON 1960, DEYRUP 1984, JENNINGS & AUSTIN 2004). Due to their particular biological traits, aulacids are not easily observed in their natural habitats and they are not frequently collected by most of the usual collecting methods. As consequence, many species are known from a few specimens or only one. This is especially true for Afrotropical region, for which we have only a poor sample of specimens (TURRISI 2006).

The present note deals with the record of some additional specimens, which allows a significant addition to the current knowledge on Afrotropical Aulacidae.

Material and methods

The material examined includes four specimens belonging to two different species. Depositories are listed below, curators in brackets (acronyms from EVENHUIS 2017).

NMW Naturhistorisches Museum, Wien, Austria (Michael Madl and Dominique Zimmermann).

OLML Oberösterreichisches Landesmuseum, Linz, Austria (Fritz Gusenleitner and Martin Schwarz).

NHML National Museum of Natural History, Leiden, The Netherlands (Frederique Bakker).

The species considered in the present note are treated in some detail, taking into account the characters whose combination makes easy the identification; the characters are based on female with only different male characters indicated in brackets. For detailed taxonomic treatment, description and key to species of the Afrotropical Aulacidae see TURRISI (2006) and VAN NOORT (2017).

Results

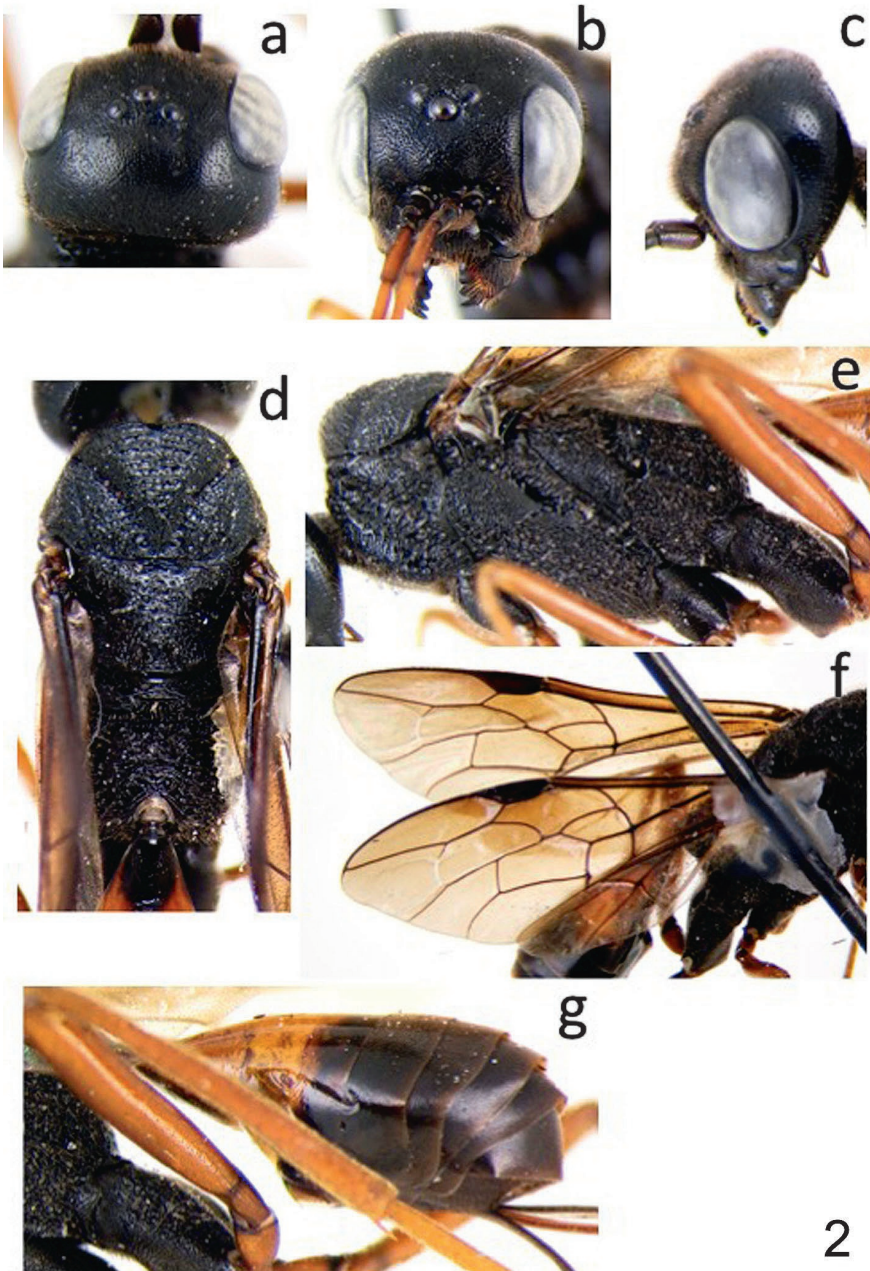
Pristaulacus africanus (BRUES, 1924) (Figs 1, 2, 5)

Material examined: Republic of South Africa: Cape Province, Wellington, Rooshoek, XII.1973, 1♀, P.M.F. Verhoeff leg. (NHML).

Distribution. Republic of South Africa (Western Cape Province).



Fig. 1: *Pristaulacus africanus* (BRUES 1924), female habitus, lateral view.



2

Fig. 2: *Pristaulacus africanus* (BRUES 1924) female, main morphological features: (2a) head, dorsal view; (2b) head, frontal view; (2c) head, lateral view; (2d) mesosoma, dorsal view; (2e) mesosoma, lateral view; (2f) wings; (2g) metasoma, lateral view.

I d e n t i f i c a t i o n . Length: 9.0-11.1 mm (female), 11.0-11.2 mm (male); fore wing length: 7.0-8.9 mm (female); 8.2-8.4 mm (male). *Colour* blackish with antenno-meres 3-6 reddish orange (entirely blackish in male), femora, tibiae and tarsi reddish orange brown (tarsi darker), metasoma extensively reddish orange (tergites 1-2 except dorsal petiole and posterior part of tergite 2), fore wing slightly to moderately infusate, without dark spots, setae mostly brownish. *Head* 1.5 × wider than long (dorsal view), occipital carina very narrow, less than 0.2 × as diameter of an ocellus, antenna 0.8 × as fore wing length (slightly longer in male). *Mesosoma* moderately sculptured, pronotum without tooth-like processes on lateroventral margin, fore wing with vein 2-rs+m long, hind coxa stocky, with transverse inner groove (ovipositor guide) placed apically, hind basitarsus elongate 11.4 × longer than wide (14.2-15.6 × in male) and 1.1 × longer than tarsomeres 2-5 (1.2-1.3 × in male), tarsal claws with three well-spaced tooth-like processes along inner margin. *Metasoma* moderately compressed, pyriform, petiole stocky 1.2 × longer than wide (1.5 × in male), ovipositor 0.9-1.0 × longer than fore wing length, apex not broadened.

***Pristaulacus smithi* TURRISI, 2006 (Figs 3-5)**

M a t e r i a l e x a m i n e d : Namibia: Erongo province, 1-5 km E from Usako, 21°58' S, 15°36'E, 900 m a.s.l., 14.III.2014, 1♂, J. Halada leg. (OLML). Botswana: Kasane environs, 29.XII-7.I.1997, 1♀, M. Snizek leg. (NMW). Republic of South Africa: Limpopo, Thabazimbi, 21.XII.2008, 1♀, M. Snizek leg. (OLML).

D i s t r i b u t i o n . Namibia, Botswana, Zimbabwe, Mozambique, Republic of South Africa.

I d e n t i f i c a t i o n . Length: 9.0-11.0 mm (female), 10.6-11.0-mm (male); fore wing length: 5.5-8.0 mm (female); 5.4-5.6 mm (male). *Colour* blackish with clypeus, malar area, basal half of mandible, pronotum, most of propleuron, anterolateral corner of mesonotum, small spot on upper mesopleuron, reddish orange, fore wing hyaline with narrow, dark brown band from stigma reaching the posterior margin (reduced to obsolescent in some specimens), and a small apical dark brown spot, setae mostly silvery. *Head* 1.3 × wider than long (dorsal view), occipital carina narrow, about 0.2 × as diameter of an ocellus, antenna 0.6 × as fore wing length (0.4 × in male). *Mesosoma* coarsely sculptured, pronotum with forward tooth-like processes just above mid-length of lateroventral margin, mesoscutum bearing three pairs of triangular upward processes, scutellum with one pair of similar processes, fore wing with vein 2-rs+m long, hind coxa moderately elongate, with transverse inner groove (ovipositor guide) placed subbasally, hind basitarsus very swollen, 6.5 × longer than wide (3.9 × in male) and 1.7 × longer than tarsomeres 2-5 (1.8 × in male), tarsal claws with three serrated tooth-like processes along inner margin. *Metasoma* moderately compressed, pyriform, petiole elongate 5.8 × longer than wide (5.0 × in male), ovipositor 0.6 × longer than fore wing length, apex distinctly broadened.

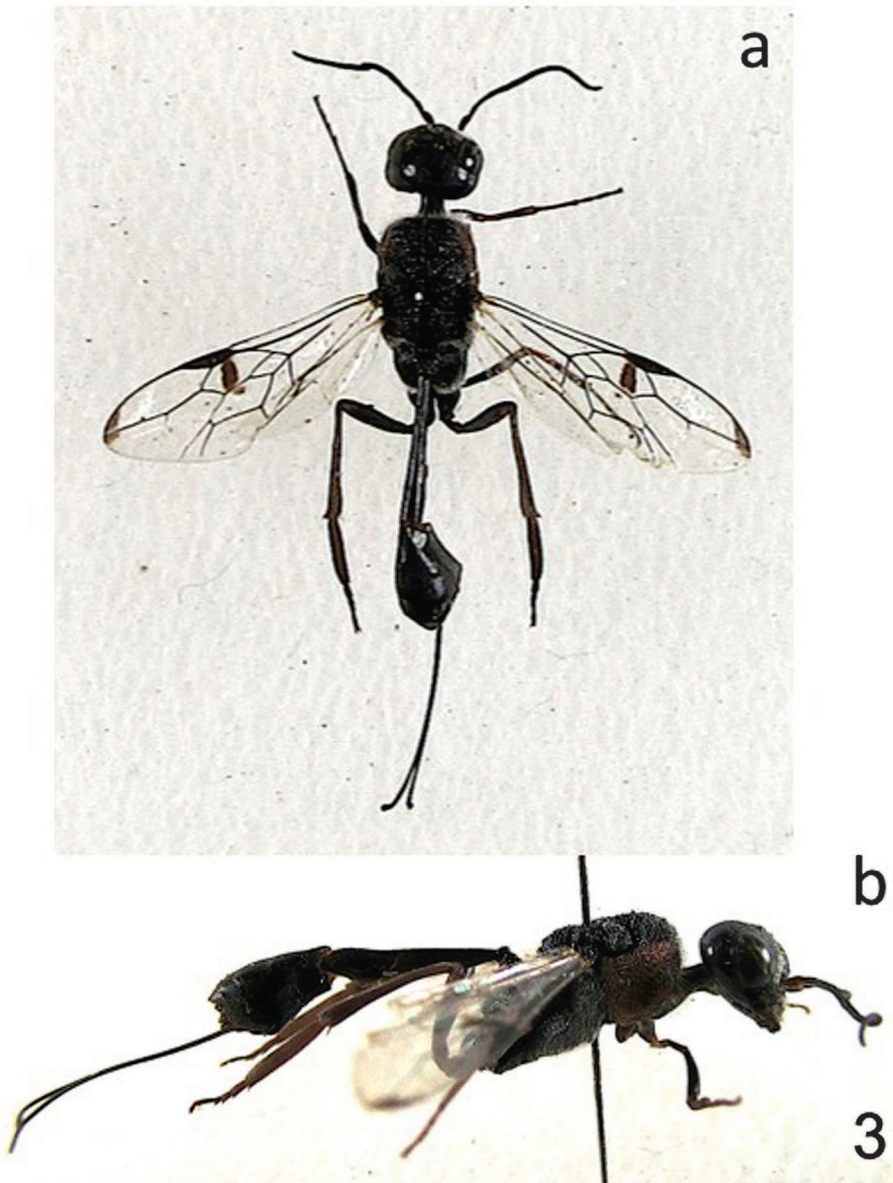


Fig. 3: *Pristaulacus smithi* TURRISI, 2006, female, habitus: (3a) dorsal view; (3b) lateral view.

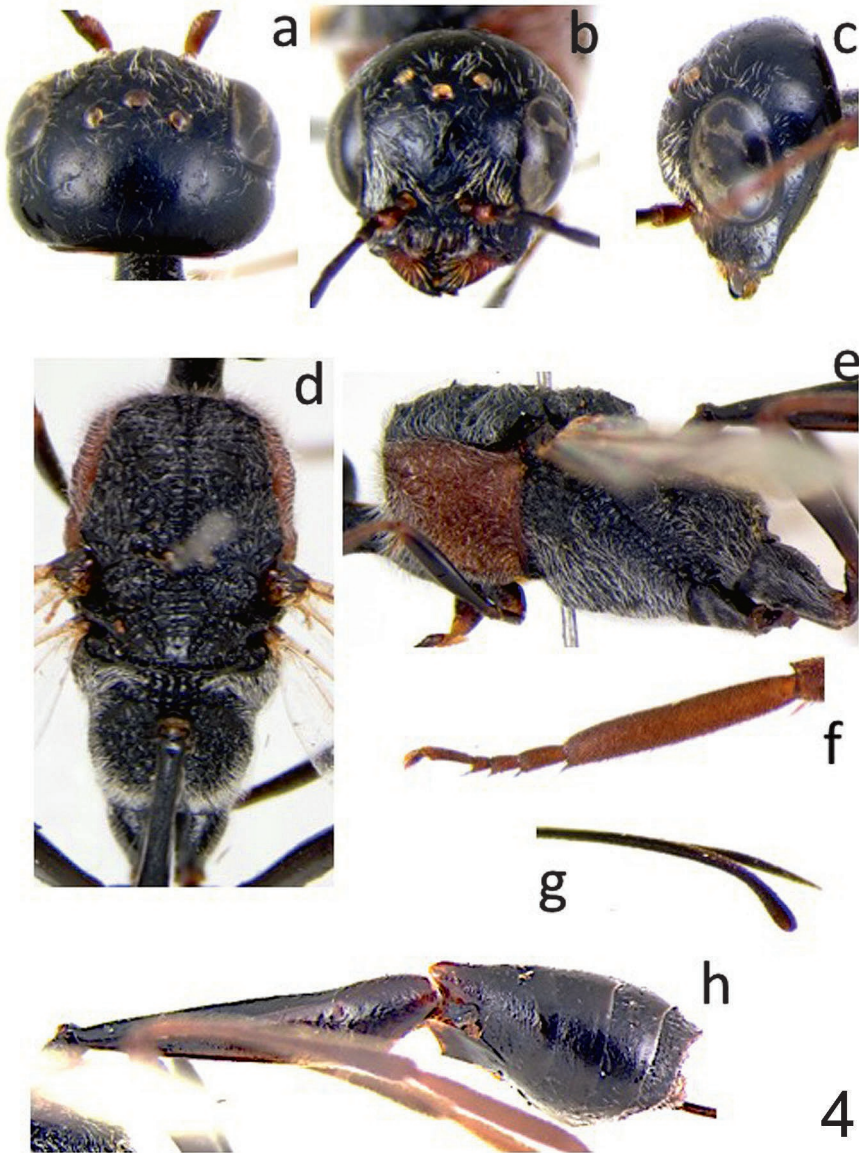


Fig. 4: *Pristaulacus smithi* TURRISI, 2006 female, main morphological features: (4a) head, dorsal view; (4b) head, frontal view; (4c) head, lateral view; (4d) mesosoma, dorsal view; (4e) mesosoma, lateral view; (4f) hind tarsus; (4g) ovipositor, apex; (4h) metasoma, lateral view.

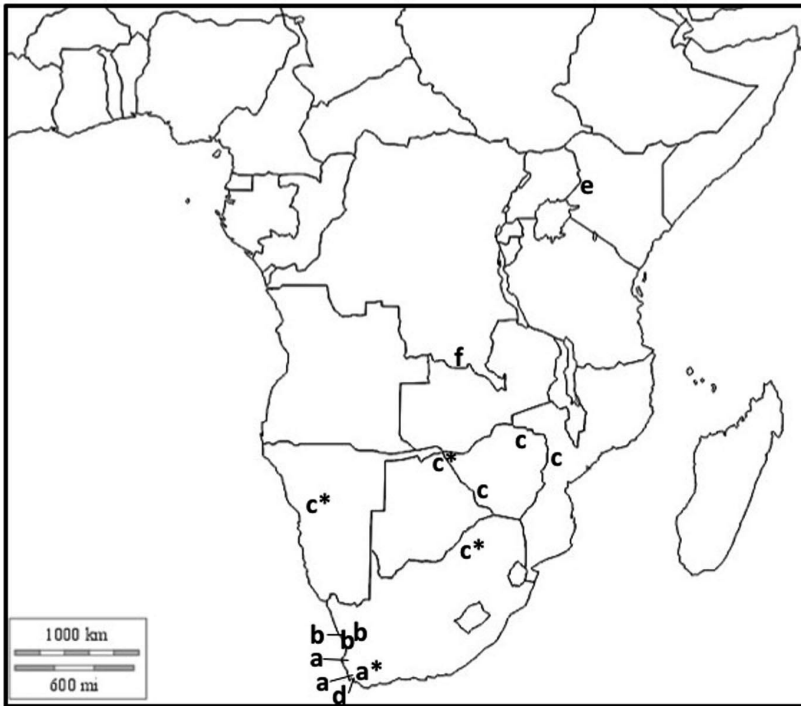


Fig. 5: Distribution of Afrotropical species of Aulacidae (based also on previous data from TURRISI 2006): **a**= *Pristaulacus africanus* (BRUES, 1924); **b**= *Pristaulacus pilatoi* TURRISI, 2006; **c**= *Pristaulacus smithi* TURRISI, 2006; **d**= *Pristaulacus thoracicus* (WESTWOOD, 1841); **e**= *Pristaulacus irenae* (MADL, 1990); **f**= *Pristaulacus rex* (BENOIT, 1984).

Remarks

As within our knowledge, the Afrotropical Aulacidae include six species all belonging to the genus *Pristaulacus* (TURRISI 2006, 2017, VAN NOORT 2017). Despite the efforts for search for Afrotropical Aulacidae material in many International museums, the number of specimens is very low, a total of 23. Moreover, extensive efforts done by the Iziko South African Museum under the "Afrotropical Hymenoptera Initiative" (VAN NOORT 2017) have not added further material, although the sorting of the material is not yet complete and large work is needed (Van Noort, personal communication). The recent discovery of two new species clearly shows that more species exist, particularly since large areas of Afrotropics appears to be unexplored. The present note adds a significant extension of the known range of the family in Afrotropics, partly mitigating the gap previously highlighted by TURRISI (2006). Based on these data, *Pristaulacus africanus* seems to be restricted to Western Cape Province (Republic of South Africa) (Fig. 5), whereas, *Pristaulacus smithi* has a wider distribution covering the entire South Africa (Fig. 5), being newly recorded from Namibia, Botswana and Republic of South Africa.

Acknowledgements

I would to express my warm gratitude to the curators of the Museums mentioned above for providing me such interesting material.

Zusammenfassung

Die unverwechselbare Art *Pristaulacus smithi* TURRISI, 2006, bisher aus Mosambik und Simbabwe bekannt, kann nunmehr auch aus Namibia, Botswana und der Republik Südafrika bestätigt werden, eine deutliche Erweiterung des ursprünglich publizierten Areals. Ein weiteres Exemplar der nur in wenigen Exemplaren bekannten *Pristaulacus africanus* (BRUES, 1924) bestätigt die scheinbare Beschränkung ihres Vorkommens auf die Provinz Western Cape der Republik Südafrika. Abbildungen charakteristischer Merkmale beider Arten ergänzen die Arbeit. Eine kurze Zusammenfassung der bisher bekannten Verbreitung afrotropischer Aulacidae wird dargestellt.

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